

[0074]

CLAIMS

5 1. A transparent thin-film solar-cell module comprising a
multilayer film comprising a first electrode layer, a
semiconductor layer, and a second electrode layer stacked in
that order on a main surface of a transparent insulating
substrate; a cell region comprising a plurality of
10 photoelectric conversion cells connected in series; and a
plurality of light-transmissive aperture holes in the cell
region, the plurality of light-transmissive aperture holes
being formed by removing at least the second electrode layer,
the light-transmissive aperture holes each having a diameter
15 of 30 μm to 500 μm , the plurality of light-transmissive
aperture holes being disposed in a line at a distance between
the centers of the light-transmissive aperture holes of 1.01
to 2 times the diameter of each light-transmissive aperture
hole.

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[0075]

2. The transparent thin-film solar-cell module according to
claim 1, wherein the plurality of light-transmissive aperture
holes are disposed in a straight line at intervals of 1.01 to
25 1.5 times the diameter of each light-transmissive aperture
hole.

[0076]

3. The transparent thin-film solar-cell module according to claim 1 or 2, wherein the light-transmissive aperture holes each have a diameter of 100 μm to 300 μm .

5 [0077]

4. The transparent thin-film solar-cell module according to any one of claims 1 to 3, wherein the area ratio of the total area of the light-transmissive aperture holes to the area of the cell region is 5% to 30%.

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[0078]

5. The transparent thin-film solar-cell module according to any one of claims 1 to 4, wherein the light-transmissive aperture holes are disposed in a line parallel to the series-connection direction of the photoelectric conversion cells.

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[0079]

6. The transparent thin-film solar-cell module according to any one of claims 1 to 5, wherein the light-transmissive aperture holes are disposed in lines parallel to each other at regular intervals.

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[0080]

7. The transparent thin-film solar-cell module according to any one of claims 1 to 6, wherein a back sealer is composed of a fluorocarbon resin or glass.

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[0081]

8. A method for producing the transparent thin-film solar-cell module according to claim 1, the method comprising forming the light-transmissive aperture holes by irradiating the multilayer film with laser light, wherein the distance
5 between the centers of adjacent light-transmissive aperture holes disposed in a straight line is determined by the frequency of Q-switching of the laser light and a relative scanning velocity between the transparent insulating substrate and the laser light.

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[0082]

9. A method for producing the transparent thin-film solar-cell module according to claim 1, the method comprising performing reverse-bias treatment after forming the light-
15 transmissive aperture holes.